NASA'S MISSION TO PLANET EARTH
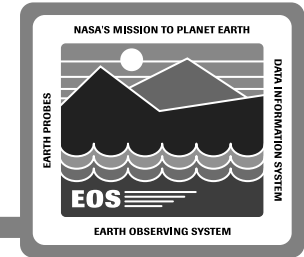
EARTH PROBES

DATA INFORMATION SYSTEM

EOS

EARTH OBSERVING SYSTEM

System I&T
Gil Scott

31 March 1995

Agenda

Verification Goals

Setting the Context

- Status

- The ECS Test Program - March 1995

- What's Next?

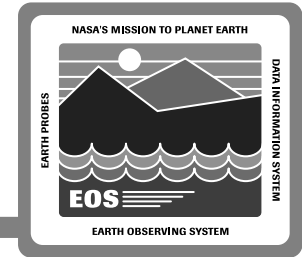System I&T for Release B   Teraisa Patterson

Acceptance Testing for Release B   Sherhonda Adams

Verification Goals

Field a Working ECS That:

- **Satisfies Baselined Requirements**
  - Verify IRDs and Level 3 Requirements
  - Traceability Assures that all Requirements are Verified - RTM Tool
- **Is Ready for ESDIS Integration**
  - External Interfaces are Tested/Verified
      Early Engineering-level Testing with Outside Systems
      Formal Test with Simulators or Actual Interfaces
  - System Installed at Sites - Site-Site Interfaces Verified
      Hardware Acceptance is Performed
- **Fulfills User Needs**
  - Verification Above Unit Level is Driven by User Scenarios
  - Segment I&T Focuses on Small Portions of a Scenario - A Thread
  - System I&T Focuses on Longer Threads
  - Acceptance Testing Uses Actual User/OPS Scenarios
- **Provides Representative Sample of Real Data to Support Testing**

Test Status
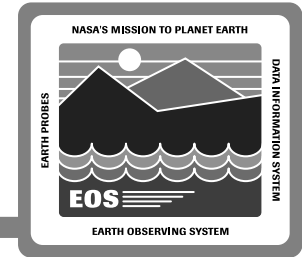
IR-1 (TRMM Infrastructure) & Release A (TRMM)

- Detailed System Integration Test Plans Submitted at PDR (Vol 1 - IR-1, Vol 2 Release A)
  - Build/Thread Descriptions
  - Sequence Descriptions
  - Test Cases
- Detailed Acceptance Test Plans Submitted at PDR for Release A
  - Scenario Descriptions
  - Sequence Descriptions
  - Test Cases
- Verification Specification Submitted at PDR
  - Requirements Allocation
  - Trace to Test Cases
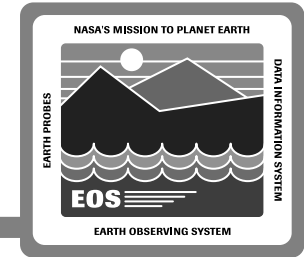
Test Status (cont.)
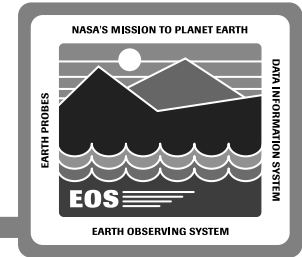
Release B (AM-1/L7)

- **System Integration Test Plan (Vol 3) - Draft Available**
  - **Build/Thread Descriptions**
- **System Acceptance Test Plan (Vol 2) - Draft Available**
  - **Scenario Descriptions**
- **Verification Specification - March 95 Snapshot**
  - **Release B Requirements Allocation (includes some Release A PDR updates)**
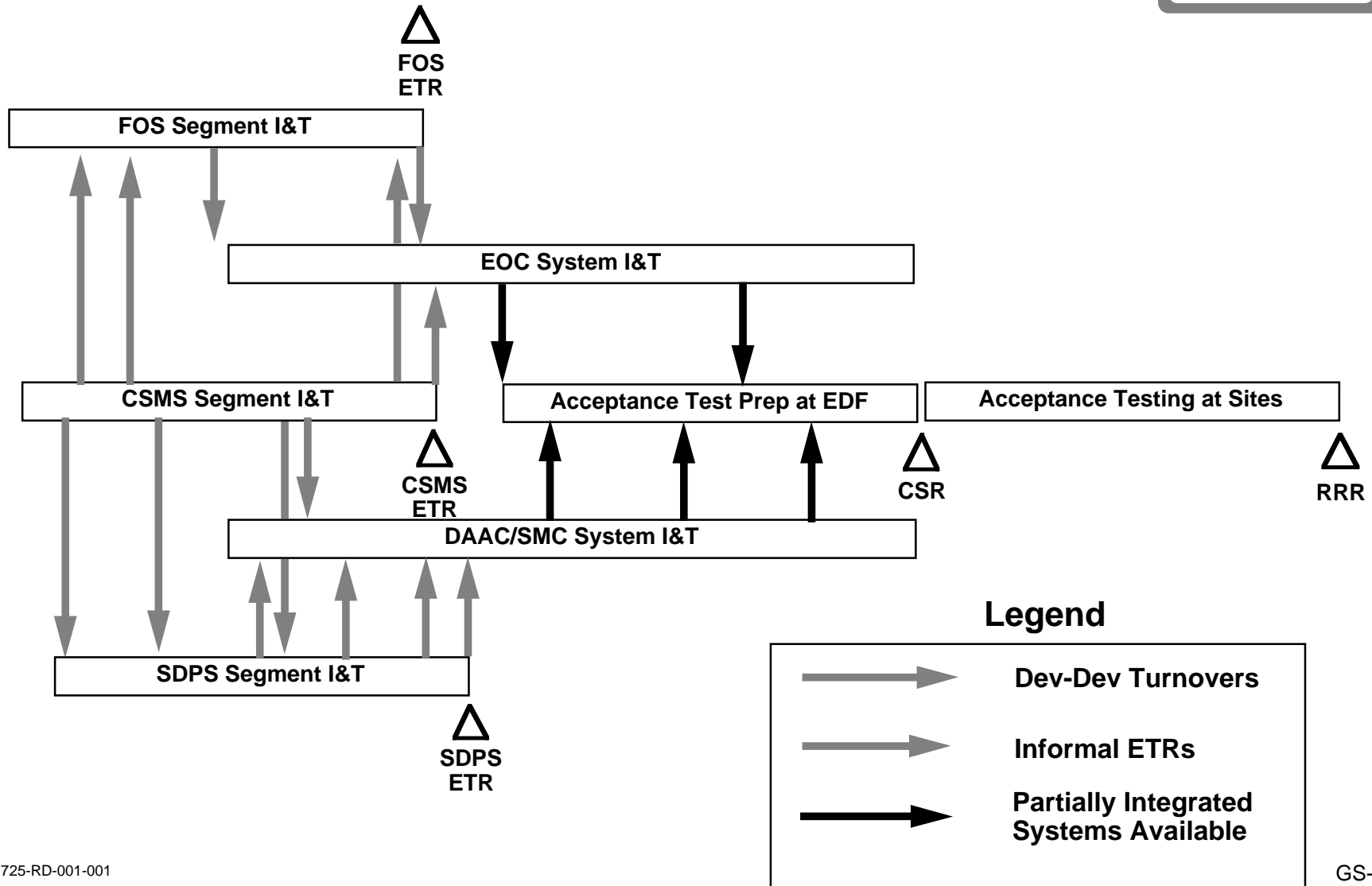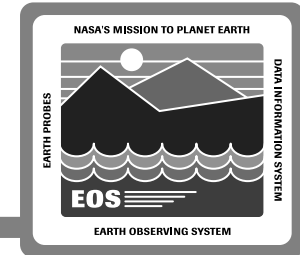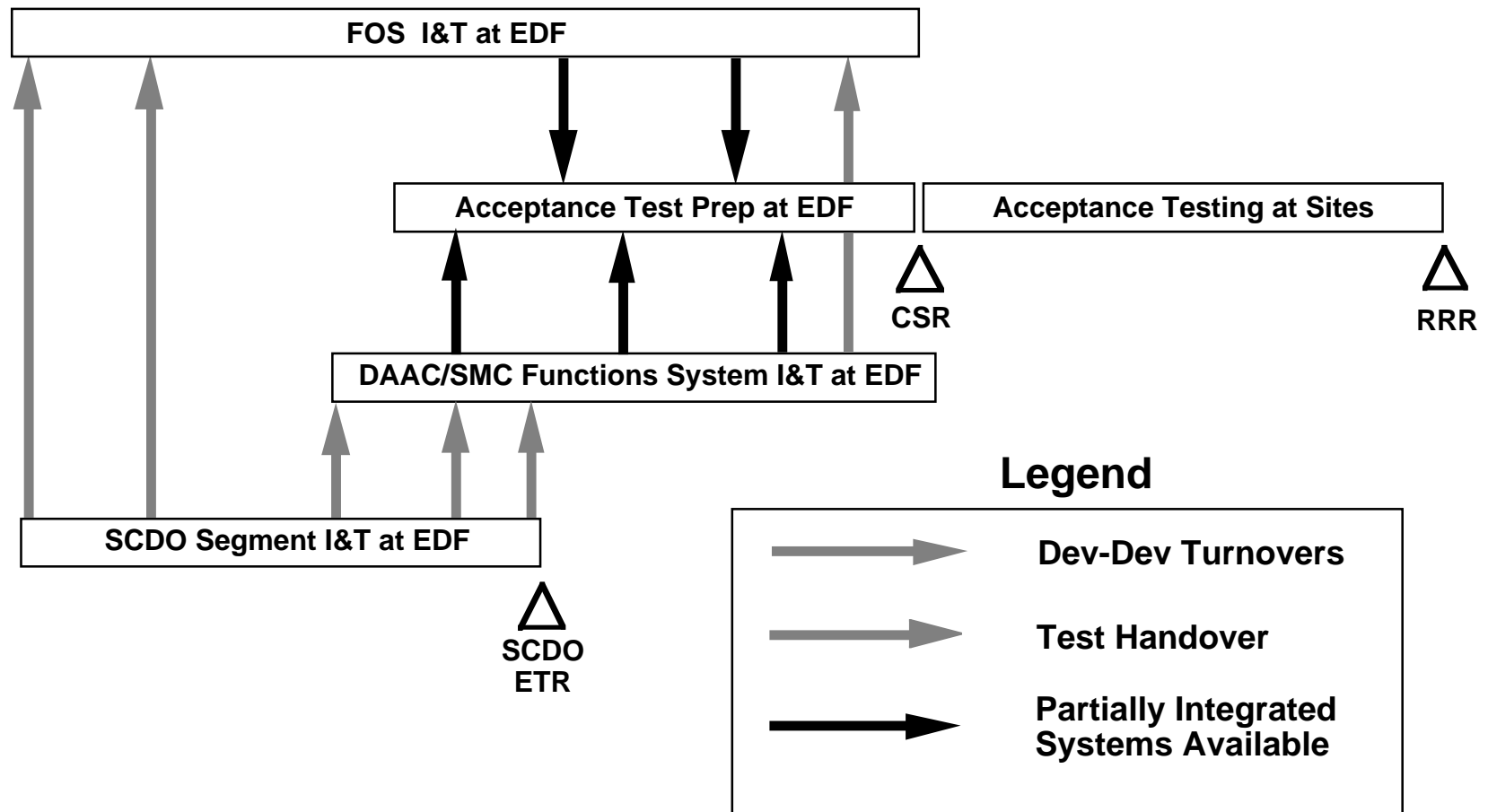
Revised ECS Test Program

Two Recent Decisions Have Resulted in Changes to Test Program

- **FOS Simplification - Practically No Real System Integration was Required. All Integration to be Done by Developer**

- **ECS Re-Organization - Streamline Group Interactions, Release Focus**

  - **Single, Unified Segment Test Organization**

  - **System I&T Execution Responsibility Moves to Release Organization**

  - **Segment and System I&T Planning Through IDR by SMO**

  - **IATO Function Remains Unchanged Under SMO**

Previous Test Flows

FOS
ETR

FOS Segment I&T

EOC System I&T

CSMS
ETR

CSMS Segment I&T

Acceptance Test Prep at EDF

Acceptance Testing at Sites

CSR

RRR

DAAC/SMC System I&T

SDPS Segment I&T

SDPS
ETR

Legend

Dev-Dev Turnovers

Informal ETRs

Partially Integrated
Systems Available

725-RD-001-001

GS-7

New Test Flows

FOS I&T at EDF

Acceptance Test Prep at EDF

Acceptance Testing at Sites

CSR

RRR

DAAC/SMC Functions System I&T at EDF

SCDO Segment I&T at EDF

SCDO
ETR

Legend

Dev-Dev Turnovers

Test Handover

Partially Integrated
Systems Available

What's Ahead - The Path to IDR
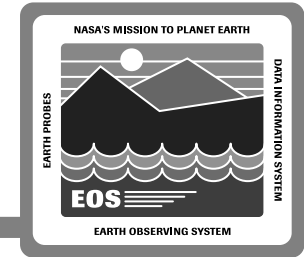
Release B Segment I&T Plan (DID 319) Will be Submitted for IDR
- Build/Thread Plan Based on CSCI Allocation in Preliminary Design
- Build/Thread Plan Influences SW Packaging and Development Strategy

Release B System I&T Plan Updated for IDR
- Sequences Within Builds and Threads Detailed
- Test Cases Within Sequences Detailed
- Tracing of Test Cases to Requirements Entered in RTM

Release B System Acceptance Test Plan Updated for IDR
- Sequences Within Scenarios Detailed
- Test Cases Within Sequences Detailed
- Tracing to Requirements Entered in RTM

Verification Spec Submitted to Capture Resulting State of Test Information in RTM